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EXAMINER

SORKIN, DAVID L

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 04/08/2003 //

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/691,645

Applicant(s)

MAURER ET AL.

Examiner

David L. Sorkin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 9-19 is/are pending in the application.
- 4a) Of the above claim(s) 9 and 10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

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## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 11-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 11 recites "defining first and second continuous joint surfaces" and later recites that the static mixer comprises "a first continuous joint surface" and "a second continuous joint surface". Therefore, subsequent references to "the first continuous joint surface" and "the second continuous joint surface" are ambiguous as to which of the first continuous joint surfaces and which of the second continuous joint surfaces is being referenced.

4. In claim 12, there is lack of antecedent basis for "the projecting part".

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 11-13 and 15-18 are rejected under 35 U.S.C. 102(e) as being anticipated by Streiff (US 6,394,644). Regarding claim 11, Streiff ('644) discloses a static mixer comprising mixer elements (10a, 10c) arranged along a central axis, each having a circumferential reinforcement region (12); intermediate elements (10b, 10d), abutting the circumferential reinforcement region and forming in combination with the mixer elements a static mixer body of a preselected length with a periphery defined by the reinforcement region and the intermediate elements; and joints between the reinforcement region and the intermediate elements defining first and second continuous joint surfaces and defining a seal formed between the first and second continuous joint surfaces reinforcement regions and the intermediate elements (see Fig. 5, 6A, 6B, 6C); a first continuous joint surface defining at least one cut-out (80,81) having an upwardly extending cavity; a second continuous joint surface supporting a protrusion (82,83) for extending into a least one cutout of the first continuous joint surface for positioning the reinforcement region and the intermediate elements at the seal of the first and second continuous joint surfaces with respect to each other; the first continuous joint surface defining the at least one cut-out (80,81) having an upwardly extending cavity of sufficient dimension for receiving the protrusion supported on the second continuous surface without obstruction within the cavity while permitting the first and second continuous joint surfaces to define the seal. The first continuous joint surface defines an unobstructed planar surface (see Figs. 6A, 6B, 6C). Regarding the functional recitation "to enable machining access for adjusting the length of the static

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mixer", one could disassemble the mixer and machine as one desires. As held in *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter 1987), "recitation with respect to the manner in which a claimed apparatus intended to be employed does not differentiate the claimed apparatus from a prior art apparatus". Regarding claim 12, the reinforcement regions are ring-shaped; the reinforcement regions have the first continuous joint surface defining cut-outs (80,81); the second continuous joint surface supports the protursion (82,83) from the continuous joint locations of at least one intermediate element, the projecting part having a shape complementary to a shape of the cut-outs. Regarding claim 13, at least some of the protrusions are separate parts fitted into cut-outs in the intermediate elements (see Figs. 6A-6C). Regarding claim 15, the mixer elements each comprise a gridwork of webs (32) which are arranged in layers oriented parallel to the central axis with the webs of adjacent layers crossing one another. Regarding claim 16, the webs of adjacent layers cross one another and enclose angles between 10 and 70 degrees (see col. 2, lines 63-66). Regarding claim 17, the elements are plastic (see col. 6, line 38). Regarding claim 18, the gridwork of webs is co-cast with the reinforcement regions (see col. 1, lines 62-65).

7. Claims 11-13, 15, 16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by King (US 4,614,440). Regarding claim 11, King ('440) discloses a static mixer comprising mixer elements (10, 12, etc.) arranged along a central axis, each having a circumferential reinforcement region (see Fig. 4); intermediate elements (11, etc.), abutting the circumferential reinforcement region and forming in combination with the mixer elements a static mixer body of a preselected length with a periphery defined

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by the reinforcement region and the intermediate elements; and joints between the reinforcement region and the intermediate elements defining first and second continuous joint surfaces and mutually defining a seal formed between the first and second continuous joint surfaces between the reinforcement regions and the intermediate elements (see Figs. 3 and 4); a first continuous joint surface defining at least one cut-out having an upwardly extending cavity (see Figs. 3 and 4) and a second continuous joint surface supporting a protrusion (see Figs. 3 and 4) for extending into at least one cut out of the first continuous joint surface for positioning the reinforcement region and the intermediate elements at the seal of the first and second continuous joint surfaces with respect to each other, the first continuous joint surface defining the cut-out having an upwardly extending cavity of sufficient dimension for receiving the protrusion supported on the second continuous surface without obstruction within the cavity while permitting the first and second continuous joint surfaces to define the seal. The first continuous joint surface defines an unobstructed planar surface (see Fig. 4). Regarding the functional recitation "to enable machining access for adjusting the length of the static mixer", one could disassemble the mixer and machine as one desires. As held in *Ex parte Masham*, supra., "recitation with respect to the manner in which a claimed apparatus intended to be employed does not differentiate the claimed apparatus from a prior art apparatus". Regarding claim 12, the reinforcement regions are ring-shaped; cut-outs are present in the reinforcement region; and a projecting part protrudes from at least one of the continuous joint locations of at least one intermediate element, the projecting shape having a shape complementary to a shape of the cut-outs (see Figs. 3

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and 4). Regarding claim 13, at least some of the projecting parts are separate parts fitted into cut-outs in the intermediate elements (see Figs. 3 and 4). Regarding claim 15, the mixer elements each comprise a gridwork of webs (13) which are arranged in layers oriented parallel to the central axis with the webs of adjacent layers crossing one another (see Fig. 3 and col. 3 lines 32-37 of King US 3,923,288 which is incorporated by reference). Regarding claim 16, the webs of adjacent layers cross one another and enclose angles between 10 and 70 degrees (see Fig. 3 and col. 3 lines 32-37 of King US 3,923,288 which is incorporated by reference). Regarding claim 18, apparatus claims are not limited by steps of making. See MPEP 2113.

8. Claims 11-13, 17 and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Bokenkroger (US 1,857,348). Regarding claim 11, Bokenkroger ('348) discloses a static mixer comprising mixer elements (9) arranged along a central axis, each having a circumferential reinforcement region (11<sup>a</sup>, 12<sup>a</sup>); intermediate elements (others of 9), abutting the circumferential reinforcement region and forming in combination with the mixer elements a static mixer body of a preselected length with a periphery defined by the reinforcement region and the intermediate elements; and joints between the reinforcement region and the intermediate elements defining first and second continuous joint surfaces and mutually forming a seal formed between the continuous joint surfaces between the first and second continuous joint surfaces between the reinforcement regions and the intermediate elements (see page 1, lines 73-99); a first continuous joint surface defining at least one cut-out (12<sup>a</sup>) having an upwardly extending cavity; a second continuous joint surface supporting a protrusion

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(11<sup>a</sup>) for extending into the at least one cut-out of the first continuous joint surface for positioning the reinforcement region and the intermediate elements with respect to each other; the first continuous joint surface defining the at least one cut-out (12<sup>a</sup>) having an upwardly extending cavity of sufficient dimension for receiving the protrusion supported on the second continuous surface without obstruction within the cavity while permitting the first and second continuous joint surfaces to define the seal. The first continuous joint surface defines an unobstructed planar surface (see Figs 3-5). Regarding the functional recitation "to enable machining access for adjusting the length of the static mixer", one could disassemble the mixer and machine as one desires. As held in *Ex parte Masham*, supra., "recitation with respect to the manner in which a claimed apparatus intended to be employed does not differentiate the claimed apparatus from a prior art apparatus". Regarding claim 12, the reinforcement regions are ring-shaped (see Fig. 3; cut-outs (12<sup>a</sup>) are present in the reinforcement region; and a projecting part (11<sup>a</sup>) protrudes from at least one of the continuous joint locations of at least one intermediate element, the projecting shape having a shape complementary to a shape of the cut-outs). Regarding claim 13, at least some of the projecting parts are separate parts fitted into cut-outs in the intermediate elements (see Figs. 3-5). Regarding claim 17, the elements are ceramic (see page 1, line 55-59). Regarding claim 19, first cut-outs are configured on one side of the reinforcement regions; and second cut-outs are configured on the other side of the reinforcement regions and displaced 90 degrees from the first cut-outs (see Figs. 3-5, page 1, lines 73-99).



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***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Streiff (US 6,394,644) in view of Takeda et al. (US 4,892,379). In the mixer of Streiff ('644) discussed above with regard to claim 11 further includes cylinder (62) holding the mixer elements at the reinforcement region and the intermediate element together. However, it is not explicitly stated the cylinder is longitudinally slit and elastic sheet metal. Takeda ('379) teaches a longitudinally slit cylinder (5) of resiliently elastic sheet metal lamina. It is considered that it would have been obvious to one of ordinary skill in the art to have made the cylinder of Streiff ('644) be a longitudinally slit cylinder of resiliently elastic sheet metal lamina as taught by Takeda ('379) to provide the benefit of spring force to hold elements therein (see col. 3, lines 7-8).

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Streiff (US 6,394,644). Streiff ('644) further discloses cut-outs on opposite sides are the reinforcement region being displaced 90 degrees from each other. However, a plurality on each side is not disclosed. Is considered that it would have been obvious to one of ordinary skill in the art to have varied duplicated the cut-outs. See *St. Regis Paper Co. v. Bemis Co., Inc.* 193 USPQ 8, 11 (CCPA 1977) and *In re Harza* 124 USPQ 379 (CCPA 1960) regarding the obviousness of duplicating parts.

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12. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over King (US 4,614,440) in view of Takeda et al. (US 4,892,379). In the mixer of King ('440) discussed above with regard to claim 11 a longitudinally slit cylinder is not disclosed. Takeda ('379) teaches a longitudinally slit cylinder (5) of resiliently elastic sheet metal lamina. It is considered that it would have been obvious to one of ordinary skill in the art to have held the elements of King ('440) in a longitudinally slit cylinder of resiliently elastic sheet metal lamina as taught by Takeda ('379) to provide the benefit of spring force to hold elements therein (see col. 3, lines 7-8).

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over King (US 4,614,440). It is considered that it would have been obvious to one of ordinary skill in the art to have made the elements of well known materials such as plastic or metal to suit a particular material being mixed.

14. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over King (US 4,614,440). The mixer of King ('440) discussed above with regard to claim 12, has first cut-outs configured on one side of the reinforcement regions and a second cut-outs configured on the other side. However, the cut-outs are not disclosed to be displaced by 90 degrees. Bokenkroger ('348) discloses a displacement of cut-outs on opposite side of 90 degrees (see page 1, lines 73-99). It is considered that it would have been obvious to one of ordinary skill in the art to have displaced the cut-outs by 90 degree because Bokenkroger ('348) teaches this results in easily assembly of elements (see page 1, lines 73-99).

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15. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bokenkroger (US 1,857,348) in view of Takeda et al. (US 4,892,379). In the mixer of Bokenkroger ('348) discussed above with regard to claim 11 further includes cylinder (7) holding the mixer elements at the reinforcement region and the intermediate element together. However, it is not explicitly stated the cylinder is longitudinally slit and elastic sheet metal. Takeda ('379) teaches a longitudinally slit cylinder (5) of resiliently elastic sheet metal lamina. It is considered that it would have been obvious to one of ordinary skill in the art to have made the cylinder of Bokenkroger ('348) be a longitudinally slit cylinder of resiliently elastic sheet metal lamina as taught by Takeda ('379) to provide the benefit of spring force to hold elements therein (see col. 3, lines 7-8).

#### ***Response to Arguments***

16. Applicant's arguments concerning the continuous joint surfaces are not convincing because they deviated from the claim limitations and instead focus upon, for example, the instant drawings. For example, applicant states "[a]s a consequence, these surfaces 22, 24 do not extend without interruption around the central portion of the static mixer of Strieff". However, the claims do not require a continuous, entirely planar, circumferential surface. Also, according to the language of claim 11, "continuous joint surface supporting a protrusion", the fact that a surface is covered by a protrusion which it supports does not imply that the underlying surface is not continuous. Instead, the claims require that the continuous surface be covered by a protrusion in this manner.

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17. Likewise, applicant discusses materials which Bokenkroger ('348) states are suitable for his invention; however, claim 11 is not limited to any particular material.

***Conclusion***

18. Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David L. Sorkin whose telephone number is 703-308-1121. The examiner can normally be reached on 8:00 -5:30 Mon.-Fri..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 703-308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are 703-

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872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



David Sorkin

April 3, 2003



CHARLES E. COOLEY  
PRIMARY EXAMINER